

**CALCIUM SULFONATE/RUST PENETRATING SEALER MGS-00-01B**

1.0 DESCRIPTION. This specification covers a calcium sulfonate/rust penetrating sealer for steel.

1.1 This sealer may be used as a stand-alone treatment, or after allowing a minimum drying time, may be recoated with an approved primer or topcoat. It is suitable for any steel structure which has developed pack rusting in overlapping steel plates, joints or at bolted areas. It is intended for brush, aerosol spray, and conventional or airless spray. This coating is to be used on in-place structures as part of a long-term maintenance program, and as such should be applied in accordance with SSPC-PA1 "Shop, Field and Maintenance Painting".

1.2 The theoretical spreading rate for a 1.0 mil dry film is 705 square feet/US gallon. Actual spreading rates can be significantly lower. All composition percentages are on a weight basis unless otherwise stated.

2.0 REFERENCE STANDARDS.**2.1 American Society for Testing and Materials (ASTM).****2.1.1 Test Methods for Properties:**

B117	Salt Spray (Fog) Testing
D1200	Viscosity by Ford Viscosity Cup
D1210	Fineness of Dispersion of Pigment – Vehicle Systems
D3960	Volatile Organic Content (VOC) of Paints

2.2 Federal Standards.**2.2.1 Federal Test Method Standard No. 141:**

Method 4061 Drying Time

Method 4203 Reducibility and Dilution Stability

3.0 COMPOSITION.

3.1 The rust inhibitive resin used in the manufacture shall be a crystalline overbased calcium sulfonate.

3.2 The penetrating sealer shall be uniform, stable in storage, and free from grit and coarse particulates. This material does not require additional additives such as antiskin agents, dry accelerators, etc.

4.0 PROPERTIES.**4.1 Mixed Paint:**

Calcium Sulfonate/Rust Penetrating Sealer	
Overbased Crystalline Calcium Sulfonate content, percent by weight, min.	15
Viscosity, #4 Ford Cup, Seconds	50 - 70

Volatile Organic Content, lbs./gal. (kg/L), max.	3.5 (0.42)
Coarse Particles and Skins as retained on No. 325 (45 µm) mesh sieve, percent, max.	1.0
Drying Time, Hours to Recoat	2 - 6
Flash Point, degrees F (C)	104 (40)
Salt Fog Resistance 500 hours (1-2 mil dry film over SSP-SP-5 blasted cold rolled steel: 1-2 mil profile)	No more than 1% rust under cutting blistering or peeling.

4.2 Color. The color shall be typical of red iron oxide.

4.3 Compatibility. The coating has infinite compatibility with mineral spirits, however no solvent reduction of this material is permitted.

4.4 Pigment Settlement. The paint shall show perfect suspension (10) when tested as specified in ASTM D869, when stored for six (6) months.

4.5 Working Properties. The paint shall be easily spray-applied when tested in accordance with Federal Standard No.141, Method 4331.

4.6 Condition in Container. The paint shall show no thickening, curdling, gelling, or hard caking when tested as specified in Federal Standard No.141, Method 3011 after storage for six (6) months from date of delivery in tightly covered containers at a temperature of 50 - 110 F.

5.0 LABELING. Each container shall be legibly marked with the following information:

Name: Red Iron Oxide Calcium Sulfonate/Rust Penetrating Sealer

Specification:

Color: (Red Iron Oxide)

Lot number;

Date of Manufacture;

Quantity of paint in Container;

Information and Warnings as may be required by Federal and State Laws;

Manufacturer's Name and Address.

6.0 BRAND NAME QUALIFICATION. No bids will be accepted if the manufacturer and brand name of the calcium sulfonate penetrating sealer has not been added to the qualified list. Inclusion on the qualified list may be based on documentation review, satisfactory test results, satisfactory field trial results, and compliance with this specification.

6.1 A list of qualified brands and colors is maintained in [FS-1045, Table 10](#) of the Materials Manual. To be considered for qualification, the manufacturer shall submit to Construction and Materials, PO Box 270, Jefferson City, MO 65102, a one-gallon (four-liter) sample of the penetrating sealer for which approval is requested. The sample shall be accompanied by a copy of the manufacturer's data sheet, handling and use instructions, a material safety data sheet, and test results for the actual sample of coating material supplied as a qualification sample showing compliance with all requirements of this specification. Submittals that do not have all required documentation will not be considered.

7.0 INSPECTION.

7.1 All materials supplied under this specification shall be subject to timely inspection by the department or authorized representative. The department shall have the right to reject any materials supplied that are found not to comply with the requirements of this specification.

8.0 ACCEPTANCE.

8.1 Acceptance of calcium sulfonate/rust penetrating sealer will be based on certification by the supplier that the paint supplied is in accordance with all requirements of this specification, the coating's status on the qualified list, and on the results of any tests deemed necessary by the Department.